

## II. REMARKS

### Preliminary Remarks

The applicants would like to thank the examiner for several telephone conversations between the examiner and the undersigned, which were extremely helpful.

Upon entry of this Amendment, claims 1 to 4, 8 to 18, 38 to 40, 48, 49, and 54 to 60 will be pending, of which claims 1, 10, 38, 49, and 54 to 60 are independent. Claims 1, 10, 38, 49, and 54 to 56 are amended. Claims 5 to 7, 19 to 37, and 41 to 47 were withdrawn as being directed to a non-elected invention and are canceled by this Amendment. Claims 50 to 53 are also canceled and claims 57 to 60 are new. Support for the claim amendments and the new claims can be found in the specification and claims as filed. Therefore, the applicants believe that no new matter is added.

Claims 50 to 53 were objected to under 37 C.F.R. §1.75(c) as being of improper dependent form. These claims are canceled rendering this objection moot and the applicants respectfully request its withdrawal.

Claims 8, 9, 13, 14, and 15 were not rejected and the applicants assume that these claims are in condition for allowance. The examiner has also indicated that all the pending claims are free of the prior art in view of the declaration by Yin-Ming Li under 37 C.F.R. §1.132.

This response is filed within the statutory period for response and is accompanied by a petition for a three-month extension of time and a check in the amount for the required small entity extension of time fees. The applicants respectfully request reconsideration and allowance of the present application.

### Patentability Remarks

#### *Rejection under 35 U.S.C. §112 –*

Claims 1 to 4, 10 to 12, 16 to 18, 38 to 40, and 48 to 56 were rejected under 35 U.S.C. §112, first paragraph, as not being enabled by the specification. The applicants

respectfully traverse in view of the preceding claim amendments and succeeding remarks.

Claims 50 to 53 are canceled. With respect to the remaining pending claims (including the newly added claims), the applicants respectfully submit that as amended, none of the claims are directed to Zn and Cd hyper-accumulation. Claims 1 to 4, 10 to 12, 16 to 18, 38 to 40, 48, and 49 are directed to, *inter alia*, Ni and Co hyper-accumulation; claims 57 to 64 are directed to, *inter alia*, Mn hyper-accumulation. The applicants have shown hyper-accumulation of these metals not only in the *Brassicaceae* family (e.g., in *Alyssum*) but also in non-*Brassicaceae* (e.g., *Berkheya coddii* in the *Asteraceae* family). The examiner admits this fact. Therefore, the applicants respectfully submit that the specification is fully enabled for methods involving nickel-hyperaccumulator plants that accumulate about 1000 mg or more of nickel per 1 kg dry weight of plant tissue, cobalt-hyperaccumulator plants that accumulate about 1000 mg or more of cobalt per 1 kg dry weight of plant tissue, and about 10,000 mg or more of manganese per 1 kg dry weight of plant tissue.

With respect to the examiner's statements concerning Zn and Cd in paragraph 3 of the declaration by Yin-Ming Li, filed on December 8, 2003, at best the applicants point out that this paragraph relates only to Zn and Cd hyper-accumulation in *Thlaspi caerulrscens*. There is no indication that Ni, Co, and Mn hyper-accumulation in *T. caerulrscens* would not follow the finding of the other plants in the present invention, *i.e.*, more metal uptake at higher pHs. This is in contrast to the usual response for plants (both normal and metal hyper-accumulating) of more metal uptake at lower pHs. Indeed, the applicants have not found any different behavior in *T. caerulrscens* with respect to Ni, Co, and Mn. In other words, *Thlaspi* behaves the same as *Alyssum* and *Berkheya*.

In conclusion, the applicants respectfully submit that the specification fully enables claims 1 to 4, 10 to 12, 16 to 18, 38 to 40, 48, 49, and 54 to 64 under 35 U.S.C. §112, first paragraph, and respectfully request withdrawal of this rejection.

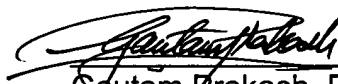
### **III. CONCLUSION**

In view of the amendments and remarks above, the applicants respectfully submit that this application is in condition for allowance and request favorable action thereon.

In the event this response is not timely filed, the applicants hereby petition for an appropriate extension of time. The fee for this extension, along with any other additional fees which may be required with respect to this response, may be charged to Deposit Account No. 01-2300, referencing Attorney Docket No. 108172-00037.

Respectfully submitted,

ARENT FOX PLLC



Gautam Prakash, Ph.D.

Registration No.: 53,481

Direct Telephone No.: 202-857-6057

Customer No.: **004372**

1050 Connecticut Avenue, N.W.  
Washington, D.C. 20036-5339

Telephone No.: 202-857-6000  
Facsimile No.: 202-857-6395

/GP